

REMARKS

This amendment is submitted in an earnest effort to bring this application to issue without delay.

Applicant has amended claims 15, 18 and 20 currently under examination as well as claim 26, withdrawn from consideration as directed to a non-elected invention. Applicant believes that 24 through 30, withdrawn from further consideration by the Examiner as directed to a non-elected invention, should be re-joined with claims 15 and 18 through 22 as now presented, which are now believed to be patentably distinguishable over the cited combination of prior art references. Antecedent basis for the amendments to claims 15, 18, 20 and 26 may be found in the specification on page 11, line 20 to page 12, line 17, page 13, lines 5 and 6, and in the specific examples, in particular, Examples 2 through 4. Thus claims 15, 18 through 22 and 24 through 30 as amended remain in the application and are again presented for examination.

The Examiner has rescinded his indication that the claims would be allowable over the prior art of record. The Examiner has reconsidered US Patent 4,719,251 to DIETLEIN et al and he now believes that this patent anticipates claims 15, 16, 21 and 22, especially in view of US Patent 4,568,718 to HUEBNER et al, which

is actually cited by its application serial number 624,545 in DIETLEIN et al, col. 6, lines 1 to 6. The Examiner contends that DIETLEIN et al discloses a trowelable silicone water based fire barrier composition as a paste that includes a silicone resin emulsion serving as a binder, water, hollow glass microspheres, and fibers. The Examiner in particular refers to Table 4 at the bottom of col. 11 of DIETLEIN et al for its disclosure of each of these ingredients. The Examiner argues that the HUEBNER et al patent application serial no. 624,545, incorporated into DIETLEIN et al discloses that the emulsion in Table 4 of DIETLEIN et al contains both a polysiloxane binder (inorganic binder) and a wetting agent (surfactant). The Examiner cites SMITH et al for its disclosure that Applicant's wetting agent is a surfactant and cites MICHALSKI for its disclosure that the silica disclosed in HUEBNER et al is an anti-foaming agent. Thus the Examiner concludes that claims 15, 16, 21 and 22 as last presented are broad enough to read on the composition set forth in Table 4 of DIETLEIN et al and thus these claims are anticipated by DIETLEIN et al.

Applicant has amended independent claims 15 and 26 to more sharply distinguish over the cited prior art references, in particular, DIETLEIN et al. Applicant notes that the fire-proof, thermally insulating pastes according to the present invention, all now require that the hollow microspheres, typically made of glass, ceramics or fly ash, have differing melting points, and be present

in a percentage of 30 to 75% by weight with respect to the total composition. Furthermore Applicant has amended the independent claims 15 and 26 to recite that the pastes and the shaped articles made from the pastes, respectively, are stable for elevated activation temperatures of up to 1400° C. There is no disclosure or suggestion of such paste compositions or shaped articles made from the pastes in DIETLEIN et al per se or in any combination with any or all of the cited secondary prior art references.

According to the DIETLEIN et al reference the hollow microspheres are not the principal feature of the invention disclosed in that reference and in fact it appears that the use of the hollow microspheres is optional since none of the claims in the reference requires the hollow microspheres. The DIETLEIN et al compositions require a silicone emulsion, ceramic or aramid fibers, and an expanded vermiculite (hydrated mica) filler, which does not fall within the scope of the Applicant's present invention. The Examiner points out that the particle size range of the glass microspheres disclosed in Example 1 of DIETLEIN et al overlaps with the particle size range set forth in present claim 18. Thus the Examiner believes that claim 15 as last presented is broad enough to read on the DIETLEIN et al reference.

Applicant emphasizes two differences between the invention as now claimed and the disclosure in DIETLEIN et al. The

hollow microspheres are an optional component in the DIETLEIN et al composition, and when present are a minor component, that is about 10% according to the proportions set forth in Table 4. On the contrary according to the present invention, the hollow microspheres are a significant part of the composition and are present in an amount of 30 to 75% of the composition. See page 13, lines 5 and 6 of the specification. Each of the specific Examples 1 through 4 prepares the paste compositions according to the present invention, and actually includes a significant amount of the hollow microspheres, in fact about 30% or more, and not the disclosed 10%, according to DIETLEIN et al. Now that the Applicant has amended the independent claims 15 and 26 to require the 30% minimum hollow microspheres, the claims now presented sharply distinguish over the disclosure in Table 4 of DIETLEIN et al where the hollow microspheres make up about 10% of the composition.

In addition Applicant notes that Examples 2 through 4 in the present application, apart from Example 1, employ the hollow microspheres having two different melting points. This aspect of the invention had been covered in dependent claim 20 all along. Now, however, the independent claims 15 and 26 as now presented also require this feature. The stability for the paste compositions in Examples 2 through 4 is much better at higher temperatures than the stability of the paste composition of Example 1 which includes hollow microspheres of only one melting point.

Therefore by introducing the limitation of hollow microspheres of different melting points in both of the independent claims 15 and 26, Applicant has further distinguished the presently claimed invention over DIETLEIN et al as well as provided evidence that the presently claimed compositions with the mixture of hollow microspheres of differing melting points perform surprisingly better than the corresponding compositions containing hollow microspheres of only one melting point. Nowhere in the DIETLEIN et al reference does Applicant see any disclosure or suggestion of using hollow microspheres of differing melting points.

The Applicant's Example 1 paste composition, which uses hollow microspheres of only one melting point, exhibits stability at temperatures only up to 800° C, whereas the paste compositions of Examples 2, 3 and 4, which employ hollow microspheres of differing melting points, exhibit stability at temperatures of up to 1400° C, and therefore possess surprising and unobvious properties not at all suggested by DIETLEIN et al. Thus the presently claimed invention is neither anticipated by DIETLEIN et al under 35 USC 102 or rendered obvious by DIETLEIN et al under 35 USC 103.

There is no disclosure or suggestion in the HUEBNER et al, MICHALSKI or SMITH et al reference of fire-resistant paste compositions for use at high temperatures that contain a minimum

30% of the hollow microspheres or of the importance of including a mixture of the hollow microspheres of differing melting points. Therefore none of these references taken in combination with DIETLEIN et al provides a basis for the rejection of any claim now presented as obvious under 35 USC 103.

The Examiner has found US Patent 5,262,254 to LEROUX et al, and has applied this reference in combination with DIETLEIN et al, HUEBNER et al, SMITH et al and MICHALSKI against claim 19. Claim 19 requires that the hollow microspheres are filled with an inert gas. Claim 3 of the LEROUX et al reference requires that the hollow microspheres are filled with a non-combustible gas and of course inert gases are non-combustible. Furthermore the LEROUX et al reference discloses compositions that contain up to 40% hollow microspheres in combination with a polyorganosiloxane compound. However, the compositions do not appear to contain water and to be in the form of a paste. Thus Applicant does not believe that the LEROUX et al reference in combination with the primary references adds to the Examiner's argument with respect to the proposed amended independent claims and to dependent claim 19. In particular.

The Examiner has rejected claim 20 by citing the primary references in combination with US Patent 4,879,066 to CROMPTON. The Examiner cites CROMPTON for its disclosure of adding a glass

frit which contains glass particles of differing melting points to a composition with fire resistance. According to the reference the purpose of adding such a glass frit is to form a fused protective layer that gives increased resistance to fire. However, the glass frit of two different melting points is not indicated to be hollow microspheres made of glass. Nor is there any indication or suggestion in CROMPTON that employing Applicant's employing hollow microspheres of differing melting points would lead to increased stability of the pastes and the shaped articles made from the pastes at temperatures up to 1400° C.

Now that Applicant has established the patentability of claims 15, and 18 through 22 over the cited prior art references, Applicant asks that the Examiner rejoin claims 24 through 30, all of which share the common technical feature of the novel and unobvious compositions of claim 15. In the case of the methods of claims 24 and 25, Applicant employs the novel and unobvious compositions of claim 15. In the case of claims 26 through 30, the shaped parts stable at temperatures up to 1400° C are prepared from the novel and unobvious compositions of claim 15.

Applicant believes that all claims now presented are in condition for allowance and a response to that effect is earnestly solicited.

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